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ABSTRACT

This study explored the extent to which computer conferencing contributes to facilitating self-direction by describing concrete activities. The study focused on interaction among participants related to self-direction. The study adapted Garrison's model (1997) considering the characteristics of data and research questions to develop the conceptual framework. Consequently, in this study, self-direction consists of three dimensions (control, critical reflection, and responsibility). Results are discussed for each of the following objectives: (1) interaction patterns; (2) self-directed activities; (3) extent of self-direction; and (4) mechanism of facilitating self-direction. This study confirmed that students are self-directed in an online course, as indicated by concrete self-directed activities and their extent. Furthermore, the study explained how students are self-directed in an online course by focusing on instructor and peer's roles. Major findings have several implications for practitioners. First, the study showed that a low level of structure is related to self-direction. Second, students' self-direction appeared most in the control dimension. Finally, the study confirmed that the learning environment is very important in developing self-direction. (Contains 35 references.) (AEF)

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Facilitating self-direction in computer conferencing

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Introduction

Computer conferencing, which entails "conducting a conference between two or more participants at different sites by using computer networks to transmit any combination of text, static pictures, audio and/or motion video" (Palloff & Pratt, 1999, p.189-190) originally started as a supplementary instructional mode in a conventional face-to-face class. Recently however, computer conferencing is sometimes used as a primary mode of instruction and it is even considered an alternative instructional method with high interest. This trend naturally leads to the question of its educational significance.

There are extensive studies about computer conferencing despite short history and most studies explain or enumerate its characteristics and advantages. However, most publications are theoretical discussions without a concrete case. Recently, a few studies describe what typically happens in an online course (e.g., Eastmond, 1995; McDonald, 1998). Thus, this study describes what really happens in an online course to test the educational value of computer conferencing. Especially, this study focuses on self-direction among many advantages of computer conferencing because it is a usual goal of distance education.

Computer conferencing

Many studies explain the characteristics of computer conferencing (e.g., Feenberg, 1989; Harasim, 1989, 1990; Kaye, 1989; Mason & Kaye, 1989). The major characteristics of computer conferencing include many-to-many communication, place and time independence, text-based communication, and high interactivity. Computer conferencing makes group communication possible that was impossible in traditional distance education modes. Computer conferencing synthesizes advantages of face-to-face and distance education in that all participants interact with each other and this interaction is time and place independent. In addition, instructors manage learning programs and courses that are adaptive and responsive to the needs of individual learners, by ongoing communication. Consequently, computer conferencing is a paradox in distance education by eliminating psychological separation between learner and instructor through interaction (Saba, 1988).

Interaction

Distance education can be differently defined according to its major focus. Most distance educators, however, agree that distance education assumes a physical separation between instructor and learner (e.g., Holmberg, 1995; Keegan, 1996). As a result, learners engage in learning, while considering convenient times and places instead of scheduled ones. Thus, learners have independence in time and place. Traditional distance education modes, however, are based on one-way communication in which the teacher controls learning. As a result, learners become more passive in the learning process than in a face-to-face class considering that they can't share their opinions. At the same time, learners experience isolation because of psychological distance resulting from lack of dialogue between learner and instructor or among learners. Consequently, learners do not have independence in controlling and directing their learning process. Especially, considering that learning is a transactional process, which entails exchanging ideas, thoughts, and feelings among people (Palloff & Pratt, 1999), the absence of interaction has been a great weakness, even though early distance education served the solitary learner.

Therefore, distance educators have searched for new educational methods to increase dialogue among participants for effective learning. The history of American distance education supports the importance of interaction in distance education. That is, continuous efforts providing learners with independence in their learning led to interest in interaction among participants during the learning process. Thus, the concept of interaction and its role in distance education have been important topics in distance education research (Moore, 1995).

Why is interaction important in distance education? Interaction in distance education is closely related to individualization in learning. That is, when learners actively interact with instructors or peers, they can address their consistently changing needs. This can lead to suitable learning for each person. This provides learners with independence in the learning process as well. Therefore, interaction is very important in distance education and it explains why many people undoubtedly welcome computer conferencing characterized by high interaction.

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Self-direction

For a long time, adult educators have emphasized the learner's autonomy or independence in self-directed learning. It leads to the understanding of self-directed learning in isolation excluding external assistance or interaction. The self-directed learner, however, is not, in Moore's word, "an intellectual Robinson Crusoe, castaway and shut off in self-sufficiency" (1973, p.669, cited in Brookfield, 1986). In this context, many adult educators argue the importance of interaction related to self-direction. Brookfield (1985) states the importance of external sources of assistance regarding self-direction. Garrison (1987) supports the idea that self-direction is highly dependent upon interaction and collaboration between a learner and facilitator. Candy (1991) suggests a new view defining self-direction as a product of interaction between the person and the environments. With the criticism of previous studies focusing on external control in the learning process, recently the definitions and conceptualizations have moved away from equating self-directed learning with sociologically independent learning to an interactive concept.

Garrison's model of self-directed learning

This study followed current research trend focused on multidimensional and interactive aspect of self-direction. In this context, Garrison's comprehensive model (1997) and his concept of control construct (1993) contributed to developing the conceptual framework. According to Garrison, self-directed learning is comprised of self-management, self-monitoring, and motivation and each dimension is very closely connected. Self-management means "decision of learning objectives and activities, and the management of learning resources and support" (p.22). It entails the learner's external control over the learning process. However, Garrison explains the concept of self-management based on collaborative relationships between teacher and learner instead of independence. Thus, self-management does not mean simply learner's external control. That is, self-management (control) consists of three variables, proficiency, resources, and interdependence (Garrison, 1993). Proficiency refers to "the abilities and skills of the teacher and student related to construction of knowledge". Resources refer to "diverse support from teacher and assistance from learner in educational contexts". Interdependence means "teacher responsibilities (institutional or subject norms) as well as learner choice (freedom)" (p.31-33). That is, the learner has independence in transactions with the teacher. Consequently, the balance of each variable influences the extent of control. Control is dynamic by existing in the circle of communication between teacher, learner, and curriculum as well.

Self-monitoring means the internal aspect of self-direction by referring to construction of meaning. It assumes that the learner has responsibility to construct knowledge. This is related to the extent of the learner's cognitive ability and thus it leads to differences in the degree of self-direction. Self-monitoring is a metacognitive process because it needs critical reflection as well. Self-monitoring includes collaborative confirmation. That is, constructed knowledge based on the learner's cognitive ability is confirmed by others in the learning process. Thus, self-monitoring depends on shared control based on transactions between learner and teacher.

Motivation refers to "perception and anticipation related to learning goals at the beginning of learning and mediates between control and responsibility during the learning process" (p.28). Motivation includes entering and task motivation. Entering motivation is related to the decision to participate at the beginning. Task motivation is related to the will to continue the task during the process.

Research objectives

This study explored the extent to which computer conferencing contributes to facilitating self-direction by describing concrete activities. This study focused on interaction among participants related to self-direction because it is very characteristic of computer conferencing. At the same time, it is necessary to study self-direction in group learning rather than individual study.

This study had the following objectives. First, this study explored the possibility that computer conferencing can contribute to facilitating self-direction by describing interaction patterns in an online course. Second, this study sought evidence that learners are self-directed in an online course by describing concrete self-directed activities that occurred in computer conferencing. Third, this study showed the extent of self-direction students have in this course. Finally, this study focused on interaction to explain how learners are self-directed in an online course.

Conceptual framework

This study adapted Garrison's model (1997) considering the characteristics of data and research questions to develop conceptual framework. Consequently, in this study self-direction consists of three dimensions (control, critical reflection, responsibility) and interaction influences self-direction. Self-direction means both overall decision and management related to learning and knowledge construction. Control means the opportunity and the ability related to making decisions in the learning process, capability to manage resources, and cognitive ability to construct knowledge. It consists of interdependence, proficiency, and resources. Critical reflection means the process of constructing personal meaning. Responsibility means learner's active attitude to learn.

Case description

A graduate level course taught adult education via computer conferencing in the Spring of 1998 at a midwestern university was chosen as the case for this study. This course consisted of twenty-one students. Among them were, fifteen females and six males, fifteen majored in adult education and six other majored, seven experienced people of FirstClass®, used as computer conferencing software in this course, fourteen nonexperienced. One female instructor taught this course. Students had one face-to-face meeting at the beginning of course to receive information related to course and to practice FirstClass®. After the initial face-to-face meeting, all discussions depended almost entirely on asynchronous communication. The instructor separated students into four groups considering previous FirstClass® experience, gender, distance to campus, department, and similar name. The instructor posted an overview including readings, brief summary of content, questions and activities for each Week folder. Each group decided on a weekly moderator who read weekly messages posted until Thursday midnight and summarized the discussion. The moderator posted a summary for each week in a Week folder so all four groups has a chance to read the summaries of all the groups' discussion of the past week. Students proceeded group project as well as individual learning activity according to group member's interest.

Methodology

This study analyzed the content of transcripts of participants to explore research questions. In this study, weeks 3, 8, and 13 were selected based on time period, the number of messages, the progress of group projects, and the topic of the week. The total number of messages during weeks 3, 8, 13 was 1,333. It was necessary to code total messages for data analysis. In this study, speech segment created by Henri and Rigault (1996) was used as a single unit for data analysis. After the coding work was finished, inter-rater reliabilities were assessed to decide whether several raters had a high degree of consistency. Cohen's k reliabilities for interaction type, function, and self-direction were .95, .90, and .89, respectively.

Results and discussion

Objective #1: Interaction patterns

The degree of students' participation shows whether this online course is learner-centered or teacher-centered. During weeks 3, 8, and 13, participants posted 1,333 messages. Students posted 1,159 and instructor posted 174 messages. In addition, 21 students generated 1,159 messages during 3 weeks, averaging approximately 19 messages/person/week. Related to interaction type, students provided 94% of initiation. This result was in accord with the previous studies (Eastmond, 1995; Garrison, 1987; Mason, 1988; Seaton, 1993), insisting that an online course should be learner-centered.

Objective #2: Self-Directed activities

This study categorized self-directed activities which occurred in this online course based on three dimensions of self-direction: control, critical reflection, and responsibility. Selective response, autonomous decision, providing norms, and negotiation were classified as activities of interdependence, one component of control. Interpretation, definition, judgment, and challenging or questioning were classified as activities of proficiency, one component of control. Providing help, sharing information, providing social support, and confirmation were classified as activities regarding resources, one component of control. Revision, correction, finding misconceptions, meeting new perspectives, self-reflection, connecting with previous knowledge, experience, current situation, and knowledge construction were classified as activities of critical reflection. Asking for help, information, clarification, confirmation, and notification of nonparticipation were classified as activities of responsibility.

Self-directed activities classified in this study confirmed the current conclusion that self-direction is multidimensional and is based on interaction. That is, self-directed activities confirmed the conclusion that learners had self-direction through ongoing interaction. After all, students had self-direction in learning in the process of establishing shared agreement, collective knowledge, and shared control. Self-directed activities also reflected a characteristic of computer conferencing. That is, asynchronous communication and text-based communication influenced self-directed activities. For example, students interacted with each other through written messages because computer conferencing is based on text-based communication. Thus, selective response was a strategy for controlling learning content. At the same time, this was a very important tool related to control considering that this course was response-centered. In addition, the self-directed activities that were found reflected the characteristics of group learning based on interdependence and interaction. Thus, these activities had limited generalization to face-to-face courses and individual learning. As an extension of this study, the comparisons between face-to-face and online course and between individual and group learning can contribute to explaining how students are self-directed in virtual group learning.

Objective #3: Extent of self-direction

There were 1,852 speech segments related to self-direction which was 70% of the total speech segments. This means that this course had a relatively high degree of self-direction. Within the three components of self-direction, the number of speech segments classified as control was 1,442, critical reflection was 214, and responsibility was 196. Thus, students' self-direction in this online course appeared to be mainly related to control. The number of speech segments which were classified as interdependence was 143, proficiency was 506, and resources was 793 among the three components of control. This showed that students participated in knowledge construction during the course and they received diverse resources from instructor and peers. The high percentage classified as resources implies that interaction among participants contributed to developing self-direction.

Objective #4: Mechanism of facilitating self-direction

High percentage of resources related to self-direction supports the importance of interaction. Previous studies assumed interaction influences self-direction without evidence. The researcher paid attention to message threads made by participants to examine the relationships between self-direction and interaction. Students sometimes opposed or questioned previously taken for granted assumptions and this engendered other's perspective transformation. Students experienced critical reflection through these processes. Students constructed knowledge and the instructor or peers confirmed it. Thus, interaction connected control with critical reflection. Interaction influenced the relationship between responsibility and control as well. Students asked for help when they experienced technical problems or needed more information and saw this as their responsibility. An instructor or peers provided students with diverse resources. Interaction connected responsibility with critical reflection. Students sometimes did not have a clear understanding because of an ambiguous use of a word. Students asked for more clarification to the author of a problematic message. The author automatically had an opportunity to think again about his or her own message and revise it. This helped critical reflection. After all, three components of self-direction: control, critical reflection, and responsibility are connected each other through learner-learner interaction and learner-instructor interaction.

The mechanism students can be self-directed through interaction in an online course leads to the conclusion that an instructor and peers play important roles related to facilitating self-direction. An instructor and peers influenced student's decision process. Instructor participated in this course one of participants and she collaboratively managed course with students. Related to collaborative course management, the degree of a structure of course is very important because it influences the latitude for student's choice. This course was managed according to a syllabus made by the instructor before course began and weekly overviews during the course. However, even though the instructor decided the overall structure, it could be changed according to students' response. Actually, students sometimes challenged to a rule or decision made by instructor. This resulted in a change of the teacher's structure based on shared agreement. The course structure was maintained not only by interaction between instructor and students but also by negotiation among students. Students sometimes solved problems themselves based on collaborative decisions. The instructor provided students with minimal guidelines and facilitated their learning as not a lecturer but as a facilitator in democratic environment. Thus, students frequently negotiated with the instructor and peers for effective course management and have shared control as a result.

Students built collective knowledge through interaction. An instructor and peers made learner challenge previous or current knowledge and helped to build new knowledge. The role of instructor and peers did not end only

with challenging. The instructor and peers confirmed constructed knowledge. This helped the learner to make his or her knowledge meaningful under this process. In addition, the instructor and peers provided learner with cognitive help related to knowledge construction. When students needed supplementary explanations, they rephrased ambiguous terms and provided suitable examples. Both instructor and peers contributed to building learning community in virtual learning environment.

All participants shared diverse resources in a flexible time schedule. Resources that participants shared were not related to only content and technical aspects. Students shared personal experience. Social support from the instructor and peers helped learner to overcome psychological anxiety and isolation related to using computer conferencing. Consequently, students share same feeling and experience through interaction and feel their learning community.

Implications for practice

This study confirmed that students are self-directed in an online course, as indicated by concrete self-directed activities and their extent. Furthermore, this study explained how students are self-directed in an online course by focusing on instructor and peer's roles. Major findings have several implications for practitioners.

First, this study showed that a low level of structure is related to self-direction. The instructor did not force students to follow fixed procedures but modified the structure to be responsive to learners' needs. Students had room for expressing their needs and making decisions in this environment and self-direction was a result. Thus, it is desirable for students to have an opportunity to choose or decide related to their learning. Instructors should modify traditional authoritative roles and interact with participants in order to create such an environment.

Second, students' self-direction appeared most in the control dimension. Students were self-directed regarding proficiency and resources. This supports the important role of interaction in facilitating self-direction. That is, students collaboratively construct knowledge and frequent feedback from instructor and peers helps students to achieve content and technical mastery. Therefore, instructors and course designers should pay attention to how to provide students with frequent feedback.

Finally, this study confirmed that the learning environment is very important in developing self-direction. Students experienced psychological anxiety related to a new learning environment and missed features of a traditional face-to-face course. However, students found that they studied not alone but together through frequent interaction. Social support from instructor and peers and sharing personal experience made students feel comfortable in the new environment. Thus, instructors should make an effort to develop a comfortable learning environment to facilitating self-direction, for example through informal discussion. A comfortable learning environment will help encourage lurkers to become participants.

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An Analysis of Faculty Concerns Regarding Distance Education at Canton College

Molly Mott
Suny Canton

PART A: INTRODUCTION

Nanotechnology, the new frontier of microscopic technology, is shaking up the scientific world with the same "promise and fear" that the atomic theory first shook the world during the 1950's (*USA Today*, 24 October 2000). The building of mechanical and information machines on a nanometer scale (one-billionth of a meter) has attracted both its supporters and detractors. Advocates point to the promise of one-day sending cancer-detecting microscopic machines into the human body to deliver cancer- fighting drugs. Opponents, on the other hand, warn that terrorists may someday use the technology to create nanosize mechanical germs for release in terrorist's attacks. Should the scientific community embrace or reject this new technology? What stirs its debate? Is it misunderstanding or legitimate concerns regarding its use or abuse?

New technology, whether it is new technology in the scientific field or new technology in the educational field, spurs debate. In a recent article entitled "College Online: Rethinking How to Learn," published in the *Watertown Times*, 10 September 2000, distance learning is viewed as a revolutionary force that "looms large on the education landscape." As established universities race ahead with online programs, faculty members continually debate its virtues and uses. To many educators distance education is an innovative and creative instructional medium. For others, it is the commercialism of education, an educational format plagued by pedagogical uncertainties. Many college campuses across the country are currently engaged in its controversy, and the State University of Canton College is no exception. With its unique blend of liberal arts and technology education, Canton College includes faculty that both support and deny the merits of distance education. No where is this more evident than at faculty meetings where heated debates often erupt between a skeptical liberal arts faction and a so-called "willing" technology and science faction. Such divergent educational viewpoints in one institution, I believe, provide a rich environment in order to research faculty concerns related to distance education.

Overview of distance education

"Fernunterricht" or "Tele-enseignement" are both European terms for one of the fastest growing and most controversial segments of higher education, distance education. While the terms distance education and distance learning are often used interchangeably, each word has a distinct meaning. Distance education describes the organizational framework and process of providing education at a distance. In this framework, teachers and students are separated by physical distance and technology is used to bridge the instructional delivery (Moore 1989). Distance learning, on the other hand, identifies the intended instructional outcomes and depicts the learning that takes place at a distance. Every effort will be made in this paper to adhere to these specific definitions.

Historical perspective

Most people assume that distance education is a relatively new phenomenon. However, the growth in the area of distance education is best characterized as evolutionary rather than revolutionary (Willis 1994). Learning at a distance has been going on for years; it is the mode of delivery that has changed. Today, audio, video and computer technologies are more common methods of delivery than the historical correspondence courses of years ago.

Traditionally, distance education students have been adults, studying part-time and geographically distanced from the enrolled campus. Access to continuing and higher education has typically been the primary motivating factor in students enrolling in distance education courses. Recent evidence suggests that this demographic trend is changing. Younger, local students with full-time course loads that combine distance education courses with on-campus courses now comprise new student populations (Wallace 1996). While students of the past sought access to continuing and higher education; students of today are attracted to distance education because of the ability gain control over the time, place and pace of their learning. Consider the following article entitled, "SUNY Online Classes Giving More People Access to Higher Ed," appearing in the *Watertown Times*, 20 October 2000:

> Ms. Walker is a full-time student at Jefferson Community College. Four days a week she commutes to take four night classes. There were not enough hours in her schedule to take another class, so he decided to take one of her classes online. "This course is working wonderful for me as a mother because I can do it at home. I wouldn't be able to take a fifth class if it wasn't online."

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Delivery Technologies

Distance education involves two main delivery methods: synchronous (interactive video) and asynchronous (online or web-based). Synchronous learning is the simultaneous participation of student and instructor. Instructional delivery is at the same time, but at different locations. For example, various campuses in the State University of New York (SUNY) are linked to one another via a telecommunications line. This telecommunication line transmits live video. Thus, a SUNY Canton site may be transmitting a "live" course via television to another SUNY campus, allowing live group discussion between sites. In order to accommodate synchronous delivery, special distance learning classrooms must be constructed. These classrooms are equipped with television monitors, ceiling microphones, sound proof walls, as well as computer and other technological equipment necessary to conduct interactive classrooms. Such classrooms can be expensive. They require a significant initial capital investment, and funding for on-going equipment maintenance and support.

Asynchronous instruction, on the other hand, does not require that student and instructor be located in the same location at the same time. Instructional delivery is at different times and different locations. Examples of asynchronous delivery include email, listservs, and web-based or online instruction. Asynchronous instruction can occur anytime, anyplace, as long as the student has a computer and access to the course through a registration process. Students are able to choose their own instructional time frame, and studying lectures and participating in their class according to their own schedule. The primary advantage of asynchronous learning is flexibility; students choose the location and the time for learning. However, there are disadvantages to online instruction. These include considerable email-based written exchange and online development training needs of the faculty. Both forms of instructional delivery will be included under the general term distance education for purposes here.

Trends in distance education

According to the U.S. Department of Education, National Center for Education Statistics (1999): Nearly 80% of public, four-year institutions and over 60% of public, two-year institutions offered distance education courses in the 1997-1998 academic year. Overall, U.S. higher education institutions reported 1, 661,100 students are enrolled in distance education courses. The most popular delivery technologies used were asynchronous Internet instruction (58%), two-way interactive video (54%), and one-way pre recorded video (47%). This year the State University of New York (SUNY) system itself enrolled more than 20,000 students in distance learning courses, 7,000 more than last year. Five years ago only 119 students were taking distance learning courses. It is estimated that in the next two years 85 percent of American colleges will be offering online courses to over two million students (Moore 2000).

History of distance education at Canton College

Canton College has been using both asynchronous and synchronous methods of distance learning since 1997. The college uses a 2-way audio/visual conferencing system, interactive television, to send and receive classes to and from other state colleges. More than 2,000 students have participated in course offerings that have included Companion Animal Behavior, Criminal Law, Business Communications and Wine Tasting. Recently, the college has begun an ambitious project with China utilizing interactive video to broadcast courses in English Conversation to a class of twenty Beijing high school students. Canton also participates in the SUNY Learning Network, an umbrella organization offering online courses at forty-five SUNY institutions (see Appendix A).

PART B: PURPOSE AND OUTLINE OF PAPER

It is my intent to study distance education at the State University of New York at Canton College, juxtaposing viewpoints from a humanities and liberal arts perspective with those of a science, medical and technical perspective. It is hoped that such an analysis will provide an interdisciplinary context for understanding faculty concerns and a framework for applying current educational research to specific faculty issues.

Why this thesis?

I developed this thesis as a result of witnessing the many skirmishes and debates among fellow faculty members over the use and value of distance education. I listened as faculty expressed their concerns over distance education and deliberated its merits. While many of my colleagues expressed a substantial amount of opinion, I

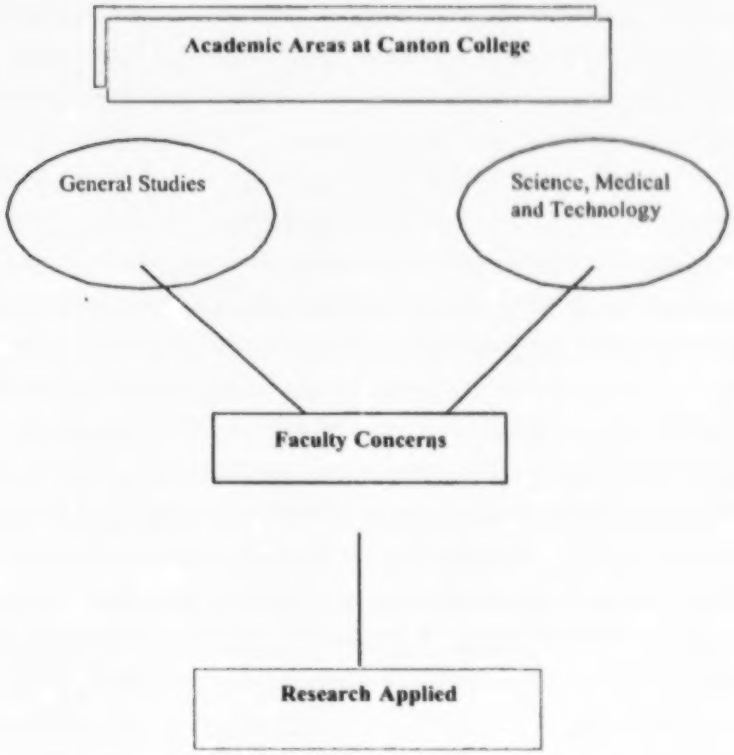
heard little research applied to such concerns. If faculty members believe that student learning is compromised by distance, I wanted to know whether or not educational research supports this claim. I was also curious about the pattern of opinion I observed at the college. It seemed that those faculty representing the liberal arts, writing and humanities curricula were quite vocal against distance education, while those members of the science, medical and technical aspect of the campus appeared either nonaligned or willing to explore the use of distance education in their courses. I wondered if the various schools of education at Canton College shared any common ground of concerns, or did any one faction harbor specific concerns while others did not. More importantly, could I explore the merit of these issues through the use of educational research? The answers to these questions form the basis of my paper.

Biases Acknowledged

I think it important to acknowledge my personal background and biases regarding distance education. I have been instructing one course via three different instructional modalities, two of which are taught in a distance learning format. In the fall semester, I teach the course on campus, while in the spring and I teach the course via interactive video and the Internet. As a result of this experience, I am keenly aware of issues surrounding distance education, both political as well as pedagogical, and understand the concerns that many faculty members have on campus regarding its use in higher education. However, I feel such experience has only made me more willing to explore research into this area of education. I believe that my experience with distance education will not inhibit the execution of my thesis, rather, I hope it will provide a knowledgeable context to record faculty concerns and a dispassionate vehicle for applying educational research to these concerns.

How this project was conducted

The intent of this project was not to engage in rigorous scientific study, but rather, to explore general perceptions regarding distance education and to provide a cross-sectional representation of faculty concerns at Canton College. I divided the academic schools at Canton College into two fields of interest: general studies (sociology, psychology and English) and science, health and technology. Three representatives from each respective school were then asked to participate in personal interviews. Faculty members with varying degrees and experience in distance education were selected. An honest effort was made to objectively choose faculty without a reference to their beliefs; however, I must acknowledge that I did choose those faculty I knew to be abundant in their opinions so as to obtain as much data as possible. Each faculty member during the interview was asked to discuss particular issues or concerns that they had related to distance education and to prioritize such issues. Educational research, including published formal studies and journal reports, was then applied to specific faculty concerns regarding distance education.



PART C: FACULTY OPINIONS ON DISTANCE EDUCATION

Overview of Faculty Outlook

Currently, one in 10 higher education National Education Association (NEA) members teaches a distance education course (NEA, 2000, 4). The Association's June 2000 report, "A Survey of Traditional and Distance Learning Higher Education Members", provides statistical information regarding faculty outlook towards distance education. Among the findings:

- 51% of traditional faculty hold positive feelings toward distance education courses, compared to 22% who hold negative feelings. A significant proportion, (28%), of traditional faculty remain undecided.
- Among distance learning faculty, 72% hold positive feelings compared to only 14 % who hold negative feelings.

United University Professions (UUP), a union comprising 24,000 academic and professional faculty from 29 campuses, conducted a similar poll. Members were asked about the issue of distance learning within the State University of New York (SUNY) system. Published results from a poll of 500 UUP members indicated that members were overwhelmingly receptive to the use of distance learning but expressed a strong skepticism about its quality, effectiveness and impact on their profession (*Scheurman 2000,11*):

- 72 percent of respondents believe distance learning will mean more work for the same pay.
- 73 percent of respondents worry about their intellectual property rights.

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- 68 percent of respondents do not believe that distance learning courses provide the same quality as traditional courses.

Faculty Outlook at Canton College

> The debate between the new and the old, technology and traditional, has been going on since the days of Plato and Socrates. Socrates, versed in the traditional art of oral education, refuted the written expression, the new educational format of his student, Plato. Such an analogy parallels the resistance of traditional pedagogy to new educational delivery, distance education (Horn 2000).

Ultimately, the success of any distance education program rests with the faculty. In general, Canton College faculty expressed concerns ranging from pedagogical and student achievement issues, to those of assessment, compensation and workload. Faculty seemed most concerned with issues of quality learning and less concerned with issues of copyright and compensation. Although issues of workload, compensation etc. were important to Canton faculty, they seemed less important than the issues of quality instruction and student learning. Interestingly, this observation somewhat parallels the 1999 NEA findings in which polled faculty reported that they evaluated distance education primarily on quality of education and secondarily on more traditional union considerations (NEA, 2000, 35).

Interview Results

Interview results reflecting individual faculty concerns regarding distance education and comments related to those concerns, can be found in Appendix B.

PART D: RESEARCH APPLIED TO FACULTY CONCERNS

Concern: Student Achievement

Of primary concern to the faculty at Canton College is the question of student learning. Do distant students learn as much as students receiving traditional face-to-face instruction? Faculty members at Canton College were passionate in their belief that student achievement is significantly lower in a distance education than it is in traditional instruction. Many faculty members argued that students do not learn as much, as well, or as effectively in a distance learning format as they do in a traditional learning format.

However, hundreds of general media comparison studies conducted over the last forty years have demonstrated no significant difference in achievement levels between distant and traditional learners (Cyrs 1997,4). Most of this research has generally been in the area of instructional television. Studies by Crow (1977) "found that there was no significant difference in student achievement regardless of the proximity of the instructor." Dubin and Travaggia's (1968) longitudinal study demonstrated "clearly and unequivocally that there is no measurable difference among truly distinctive methods of college instruction when evaluated by student performance." Whittington (1989), in his review of research literature on distance education concluded that " findings of equivalent student achievement hold even when rigorous methodological research standards are applied." According to DeLoughry (1998), students learn as much and as well in computer-mediated instruction as they do in traditional educational settings. DeLoughry cites a study conducted by researchers at the New Jersey Institute of Technology to support his claim:

> Researchers tested the effectiveness of online ins action by studying five courses in which a total of 98 students were enrolled for classroom-based instruction and 80 others were instructed online. A comparison of the average test and course grades for the two groups in each course turned up no statistically significant differences between the experimental and control groups.

Research has also demonstrated in general that students learn at a distance as well and as effectively as students in traditional face-to-face classrooms (Cyrs 1997,4). The following excerpt from Clark (1983) summarizes the influences of media on student learning:

> Media comparison studies clearly suggest that media do not influence learning under any conditions. The best current evidence is that media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition. Basically, the choice of vehicle might influence the cost or extent of distributing instruction, but only the content of the vehicle can influence achievement (Clark

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While comparison studies may document education outcomes, they omit several key concepts regarding student learning. First, comparison studies do little to address learner experience, i.e., student satisfaction levels and student attitudes. In essence, they ignore the role of social presence in student learning. Recent educational research on distance learning has recognized this deficiency and is now shifting the focus from comparative studies to theory –based studies. Theory-based studies explore the social aspects of student learning. Fahab (2000) outlines the following research findings:

- Fulford and Zhang (1993) evaluated learner perception of interaction in instruction. Their research findings concluded that overall interaction dynamics may have a stronger impact on learners' satisfaction than strictly personal participation.

- McDonald and Gibson (1998) explored interpersonal interaction and group development in an asynchronous distance education environment. Their studies concluded that students are capable of resolving interpersonal issues and form organized, cohesive working groups.

- Gunawardena (1995, p. 164) studied the social presence theory for community building in computer mediated conferencing. She concluded "in spite of the low social context cues of the medium, student perceptions of the social and human qualities of the medium depends on the social presence created by the instructors and the online community."

- Tsui and Ki (1996) studied school factors affecting computer mediated instruction. Their study revealed that communication among students was bilateral, as students often hesitated to enter a dialog started by two other students.

Recent studies by Kanuka and Anderson (1998) also address the social process of learning in a distance education environment. After studying the interaction among participants in a distance education forum, both researchers determined that a "significant time was engaged in social interchange followed occasionally by social discord. Social discord served as a catalyst to the knowledge construction process."

Secondly, although learning outcomes and student achievement levels are documented in media comparison studies, "quality outcomes" are not. What are quality outcomes? Do they simply imply satisfied learners or are they outcomes that demonstrate that students have achieved cognitive skills not previously possessed prior to their distance learning experience? Comparison studies would do better to qualify outcomes in their analysis.

Thirdly, although these comparison studies have addressed distance education as a whole, they have yet to explore the intricacies and particular features of each of the various distance learning modalities. Little attention has been given to specific media features and how such features contribute to learner outcomes. For example, how does a particular computer-mediated medium that uses audiographics contribute to student interaction? Michael G. Moore, in his editorial on the 1995 Distance Education Research Symposium, brings this issue to focus:

> We must begin to look at the distinguishing characteristics of these different settings. A further step is to ask how these contexts affect the learners, and their learning, the learning experience, process and outcomes *(Moore 1995)*.

It would be a judicious for comparison studies to explore learner characteristics as well. As distance education moves from a marginal to integral role in higher education, learner characteristics and their role in the process of learning will become increasingly important

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(Powell, Conway, Ross, 1990). Traditionally, successful distance learning students have been identified as older, working students possessing time management skills, high self-motivation, a positive attitude, and risk taking personalities. Demographic changes, however, will eventually alter learner characteristics. Characteristics of success that have previously defined successful distance learning students may not be characteristic of a new distance education population.

Concern: Distance Education as Big Business

Several faculty members at Canton College expressed their concern that distance education has increasingly become a consumer commodity, rather than a vehicle of education. They believe profit is the primary motivating factor in the implementation of distance education in colleges and universities across the country. A recent editorial in *AFT ON CAMPUS,* November 2000 supports this conclusion: "Wall Street is waging huge sums on the convergence of education and the Internet. There's e-commerce, now there's e-learning" (Gladieux 2000,10). Wall Street's interest in online higher education has spurred college administers interest in online education. Green (2000) cites a recent article in *Forbes*: "[Business to-consumers} is yesterday's story. Education-to-business and education-to-consumers is tomorrow's."

Traditionally private, for-profit companies occupied the technical training or blue-collar aspect of the distance education market.This is changing. For-profit education companies such as HungryMinds, SmartPlanet, eHigherEduation, SmartForce and eLearning are now competing with colleges and universities for the market share of distance education programs in continuing higher education. SmartForce reported sales worth of $189 million in 1999; eLearning generated revenues of nearly $100 billion (AFT ON CAMPUS 2000).

Increasingly, these same for-profit institutions are also competing with colleges that offer credit courses and degrees. The response of public institutions to the incursion of these companies has been twofold: colleges are now forming partnerships with such companies, or they entering the for-profit field themselves. (Moore 2000). The University of Colorado, for instance, has formed a partnership with eCollege, the large for-profit education industry (see Appendix C). New York University has created its own for-profit educational company, NYU Online. The University of Phoenix, with a student population of at least 56,000, is the largest for-profit university in the US. Other corporate alliances and educational institutions include California State University and the publishers Simon & Schuster likewise, the University of Washington has entered a partnership with Prentice Hall.

Consider the following Internet headings:

- **REPRESENTATIVES OF NEW YORK UNIVERSITY'S ONLINE DEGREE PROGRAM** are talking to agencies about NYU Online's estimated $10 million budget (*Brandweek Online 2000*).

- **COLUMBIA UNIVERSITY ESTABLISHES NEW COMMERCIAL VENTURE IN ONLINE EDUCATIONAL RESOURCES** Commercial business will be used to develop online courses and build strategic alliances with the most competitive Internet related businesses (*Chronicle of Higher Education* 2000).

- **'E-LEARNING EXPERIENCE'**
Universities 21, a network of 18 prominent universities in 10 countries, announced plans Monday to develop online-learning materials with Thomson Learning -- a division of the Thomson Corporation, an international company focusing on electronic delivery of information (*Chronicle of Higher Education 2000).*

- **WHAT MAKES A 'DOT-EDU'?**
Community colleges have stepped up their fight for the right to use World Wide Web addresses ending in ".edu" -- an increasingly coveted distinction as colleges and companies compete for distance-education students online. (*Chronicle of Higher Education 2000).*

hey are going t[illegible] web-based forms of distance education, institutions no longer occupy certain geographic niches or maintain their existing

spheres of influence (Moore1999). Consequently, external competition has forced many colleges and universities to enter the global educational market. Institutions are adopting strategies to ensure competitiveness; these strategies include distance education.

> Education on demand will dominate the marketplace and those institutions that can adapt to those changes will thrive. Those that do not may find themselves out of business (Olcott 1996).

Just what are the implications of merging distance education with big business?
Michael Moore, in his editorial on distance education and big business, expressed the following concerns:

1. Distance education will contribute to *widening the issue of inequity*. The traditional spirit of distance education was to provide access to those people denied opportunity to conventional education. Access today to the new distance education requires access to the new technology. "Americans living in rural areas are still behind those in urban areas in Internet access."(Moore 2000).

2. Distance education will *align itself to the principles of business*. Investments will be targeted in the rich markets of the health industry, business and information technology. Continuing education needs of the rest of society may not be addressed.

3. *Price wars*, common in the private sector and industry, will infiltrate education. Will institutions that undercut each other's price, undercut quality as well?

Some question whether school itself has been transformed into a lucrative market (Apple). In "Digital Diploma Mills" David Noble condemns distance learning as the "degradation of the quality of education in pursuit of the dollar" and maintains that dollars not pedagogical interest, are behind these partnerships (Scheurman 2000,11). Noble views distance education as "the biggest threat ever" to institutions and faculty.

Many schools are unaware of the risks of associated with moving online. Schools rush online to increase revenues and for fear of being left behind in the competitive market. Today, 75 percent of two-and four-year colleges offer some form of online, and the number is expected to increase to 90 percent by next year (Green 2000). This represents a dilemma for smaller colleges and universities. Smaller schools offering online courses and degrees will have to compete with the larger, more prestigious schools like Duke and Harvard University for students. Colleges and universities will need to hire sales and marketing teams just to attract students to programs. "Marketing will become more costly as the field grows and name recognition becomes ever-more difficult to establish " (Green 2000). Software development companies can spend up to $ 1 million developing a single course. As more schools adopt the gold-rush mentality, questions exist who will survive in a crowded market have fallen by the wayside."(Green 2000).

In Joshua Green's essay "The Online Education Bubble" Green cautions college administrators to be wary of rushing online in a capricious and fickle Internet market:

> Many schools seem blissfully unaware of the risk associated with moving online. Online education could be the latest in a string of over hyped Internet concepts in which an excess of giddy supply overestimates the demand (Green 2000).

College administrators, like businessmen, view technology a s a vehicle for cutting costs and generating revenues. Technology means productivity. David Noble, an outspoken critic of distance education, believes online courses serve as "a potential means of generating revenue for universities while cutting labor costs to the core (*ON CAMPUS* 2000). However the data suggests that many industries experience performance enhancement with technology rather than an increase in productivity or profitability with technology (Fahey 1998). Colleges and universities are not immune to this productivity paradox. According to William Scheuerman, president of UUP and American Federation of Teachers (AFT) vice president: "You can't use the technology as an end to save a buck. Once education is driven by savings, savings become the goal and education slips to a subordinate position (Scheuerman 2000, 11).

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Concern: Appropriate Pedagogy

Canton College faculty expressed considerable concern regarding to pedagogical issues and distance education. Many of the traditional faculty that were interviewed for this paper characterize their teacher role as one of "content provider" and "skilled facilitator" whose primary teaching methodology relies heavily upon personal interaction with students. Faculty members believe that distance education, in either its synchronous or asynchronous form, is impersonal, lacking the impact of direct contact with students. Many view distance learning as a poor substitute for "face-to-face" instruction.

At the heart of this pedagogical debate is the issue of student-to-student, student-to-content and student-to-instructor communication. Interaction is vital to the learning process (Bruffee 1982 & Flanders 1970). It provides a dialogue and a framework for confronting ideas and negotiating meaning. Pedagogy that enhances communication and social presence ultimately promotes effective instruction. Therefore, strategies that encourage student involvement, provide individual feedback, and promote interpersonal relationships do best to foster interaction. Qualities such as voice variation, self-confidence, stage presence and mastery of information are equally as important. While all of these are essential characteristics of an effective and engaging instructor, they become even more critical in a distance environment. Faculty question whether such qualities and methodology can effectively be transferred to an environment in which student and instructor are separated by distance.

It has been argued that it is the essential role of the teacher to guide and monitor students through the learning process. Garris on (1990) maintains that students need interaction with the teacher in order to "question and challenge pre-existing viewpoints and validate the knowledge gained." Streibel (1998) believes student require an instructor's help in formulating, understanding and solving problems. If interaction is so critical to the educational process, how is this achieved in distance learning settings?

Much of the educational research surrounding distance education has been devoted to documenting learning outcomes, and less effort applied to understanding the essential nature of an educational learning experience. According to Wong (1987,p.9), the "focus of much institutional effort in distance education has been directed toward the packaging and delivery of knowledge for the independent adult learner...[and] little attention has been paid to the nature of the human-to-human and human-to-machine interactions in the learning process. Institutions emphasize putting courses online rather than the choice of appropriate pedagogy (Winograd 2000). As Eastmond (cite) points out, "process fall short of theory."

Furthermore, educational research has not evaluated the effectiveness of interactive strategies that are currently being promoted and used by distance learning instructors. Chat rooms, discussion forums for students, are commonly employed as an interactive tool promoting communication among classmates. While chat rooms do provide students with the vehicle to discuss ideas among themselves, they may also lead to the reinforcement of mistakes and misunderstandings of course materials. Interactive strategies would do best if framed by educational research.

Other questions persist regarding appropriate and effective teaching strategies in a distance learning environment. How do instructors achieve elaborate encoding (i.e., the conscription of learning in a meaningful way in their distance courses)? Some educators recommended that frequent, short quizzes with scores and comments displayed assist in elaborate encoding and reinforcement (*Syllabus* 2000). Once again these may be worthwhile teaching strategies, but studies validating these findings are lacking.

Concern: Student dropout rate

Many Canton faculty associate distance education with high attrition and believed that student profiles are the most likely factors influencing course completion. Research, however, indicates multivariate reasons for student drop out. While descriptive analysis points to learner characteristics as a pivotal factor in student attrition (Rekkedal (1993, 19), learner characteristics are just one part of the puzzle. Kennedy and Powell (1976, 61) reported that students may drop out of distance education courses because of academic intimidation and the fear the lack of ability "to learn to debate and communicate in a manner which is acceptable to the academic community" (Cookson 24). Recent research using a micro-sociological approach to analysis suggests a combination of student characteristics and life circumstances preclude students from completing a course:

> The individual part-time student has a difficult time in maintaining an equilibrium of pressures within his life, pressures arising from his job, from his domestic situation, from his academic work and also from possible variations in his own personality (Kennedy and Powell 1976 ,61).

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Ostman and Wagner (1987, 47) studied of the influences of demographic, social interaction, psychological, and institutional variables on course withdrawal and found that lack of time constituted the most influential single predictor of discontinuance."

Concerns: Workload, compensation

NEA (2000) findings support faculty concerns of increased workload and inadequate compensation:

- Over half (53%) of distance learning faculty spend more hours per week preparing and delivering their distance learning courses than they do for a comparable traditional course.

- In spite of spending more hours on their distance learning course most (84%) of faculty receive no course reduction. 63% are compensated for their course as if it were part of their normal course load.

Yet, such data does not address the role providing institutions play in the support and design of distance learning courses. Access to instructional designers and other support personnel could greatly reduce time spent delivering instruction. Likewise, time and effort is dependent on the degree of interaction between instructor and student. Courses that encourage interaction require more time investment. Workload can be reflective of institutional support as well as individual instructor strategies.

CONCLUSION

Faculty members at Canton College acknowledged the value of distance education in providing access and time flexibility to non-traditional working students. They were, however, doubtful about the quality of distance education and concerned about the impact distance education may have on their profession. Both academic areas at Canton College expressed similar viewpoints regarding distance education. While members of the science, medical and technology areas of the college were the ones most like ly to utilize some form of technology in their instruction, they nonetheless expressed similar concerns regarding distance education as did the humanities and liberal arts curricula. Analysis of faculty concerns at the college did not portray any one faction as vehemently for or against distance education. This was quite the contrary to the dialogue expressed at faculty meetings. Perhaps the context of one-on-one interviews influenced the presentation of opinions.

Many of the concerns that Canton College faculty expressed during their interviews are shared by other institutions of higher education as well. A recent transcript in the

Chronicle of Higher Education (2000) detailed a discussion between regarding the impact of distance education (specifically online education) on community colleges. Much of the dialogue echoed the issues Canton College faculty raised during their interviews. Community college faculty expressed concerns over standards for distance education, attrition rates, competition choking or reducing offerings, quality of instruction, workload release time, support, faculty rights and compensation.

Faculty members at the college believed that little educational research has been applied to distance education. This is not true. Much inquiry has been dedicated to quantifying learning outcomes. Invariably, comparative studies of distance education and classroom instruction have proven time and again no significant difference between distance education learning outcomes and those of traditional instruction. However, such research fails to address the complexities of distance education, doing little to explore the theoretical foundations of the field. Recent studies, however, have begun to investigate the social experience of distance education, documenting learner perception, experience and attitude.

Faculty members question the pedagogical soundness of distance education. Many view distance education as an assembly-line approach to education, a medium for delivering more data and less knowledge. They argue that distance education hinders interaction, precluding the exchange of social and verbal cues between instructor and student. Pedagogical approaches that increase interaction and successfully engage students in the process of learning would most likely augment student scholarship. Yet such approaches have yet to be informed by educational research.

The evidence supports faculty concerns that distance education is a vehicle for big business. Partnerships between corporations and major universities are increasingly common. Institutions are forced to compete for students as never before. The effect of such competition will have on smaller schools that have limited resources and

visibility remains unclear. Administrators view distance education as a cost-saving and revenue-generating measure. The following excerpt from Michael Moore (2000) is a sobering reflection on the relationship between distance education and the business model of productivity:

> Plans at the University of Georgia Board of Reagents call for the entire first two years of the university curriculum to be available over the Internet, and for complete degree programs in all traditional disciplines to be available by 2002. One curriculumwill be offered to every student in the state. The board will select faculty members (eight per course) from throughout the state university system to construct each core course. There will be a designated instructor/facilitator for evaluation. Facilitator faculty will have no academic freedom regarding the courses they teach (Moore 2000).

PERSONAL REFLECTIONS

As I listened to my colleagues discuss distance education I could not help but sense their apprehension over the rapid changes in education. They seemed, however, resigned to the fact that higher education, despite our best protests and ideological concerns, was on a path of change that none of us had expected or anticipated twenty years ago.

Distance education is a reflection of the changes occurring, not only in high education, but in society as well. Technological advancements such as the Internet have shaped businesses and influenced policies, both governmental and educational. While distance education has made it easier for people to access higher education, the technology that drives its delivery is unavailable to many. Ironically, the same technology that seeks to avoid inequity, may be the cause of it.

Distance education also forces us to re-evaluate our roles as faculty, students and institutional members. Many in the educational community are reluctant to embrace its concept. They cite issues such intellectual property, fair compensation, impact on quality of education, increased workloads, adequate compensation for development and implementation of courses and decreased student-learner interaction as mainstays of their resistance. These issues are real, and yet to be resolved.

The lack of sound pedagogy is perhaps the most critical issue for me. Suggestions from experienced distance learning instructors regarding effective methodology and teaching strategies do not bear the weight of sound educational research. I believe there is much to learn about the social learning experience of students in a distance learning environment.

I also believe that colleges and universities ignore the realities of market demand. Distance education is not a substitute for the budget woes or fiscal dilemmas that plague our colleges, nor is it a substitute for the day- to - day interactions that define the brick and mortar experience of traditional education.

General Studies

Interview #1
Profile: Sociology professor 12 years
Experience with distance education: little

Primary Concern	Comments
Loss of student/teacher relationship	Primary role as a teacher is "sage on stage". Teacher-centered pedagogy. Paid to interpret information and giving information is "contingent upon reading my cues from my audience."
Other concerns	**Comments**
Student characteristics	Traditional students seem to lack self-discipline. How would such a student fit into or succeed in a distance learning environment? A campus setting allows physical presence of the instructor at a set time, not possible in distance learning settings.

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Education as big business	See institutions as public service trying to emulate a business model and make faculty entrepreneurs (this affects teaching).
Time investment, compensation and intellectual property rights	Certainly an issue, but not primary

Interview #2
Profile: Psychology professor 17 years
Experience with distance education: little; experienced with multimedia

Primary Concern	**Comments**
Impersonal process Little interaction outside the classroom Can not extract the social process	Allows image to be the role model Focus not on student-teacher interaction, rather, on "presentation material" Virtual skills –only apply in a virtual world
Other concerns	**Comments**
Quality of education	Distance education diminishes quality
Emergence of "two tiers of education"	Virtually educated vs. Traditionally
Time investment, compensation and intellectual property rights	Certainly an issue, but not primary

Interview #3
Profile: English professor 20 years
Experience with distance education: none

Primary Concern	**Comments**
Lack of student interaction	Face-to-face a priority One-on-one interaction- office hours Lectures more effective in delivering instruction
Other concerns	**Comments**
Lack of training	Would need a lot
Time investment, compensation and intellectual property rights	Certainly an issue, but not primary.

Science, medical and technology

Interview #4
Profile: Wireless Communication 12 years
Experience with distance education: none, extensive multimedia

Primary Concern	**Comments**
Student motivation (learner characteristics)	Students are not motivated in class, less so in an online environment
Other concerns	**Comments**
Lack of interaction	"Interface tends to alienate" People go to college for interaction- the college experience (You can't have bear blast over the Internet!)

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Time investment, compensation and intellectual property rights	Certainly an issue, but not primary.

Interview #5
Profile: Chemistry Professor 28 years
Experience with distance education: none, extensive multimedia

Primary Concern	Comments
Student achievement	Would be poor for traditional 18-20 year olds.
Other concerns	**Comments**
Lack of personal interaction, although this is course dependent	Face-to-face interaction provides motivation. Acknowledges that discussion can occur in distance education environment
Support issues	Need adequate communication between instructor and (infrastructure)computing center
Time investment, compensation and intellectual property rights	Certainly an issue, but not primary.

Interview #6
Profile: Biology Professor 4 years
Experience with distance education: none, extensive multimedia

Primary Concern	Comments
Lack of student interaction	Role of the professor is to provide motivation, create interest, explain concepts, provide direction. Would be difficult to transfer this approach to a distance education format
Other concerns	**Comments**
Student achievement	Believe significantly lowered
Student motivation	"Traditional students can't pay attention"
Distance education is "edu-tainment"	Traditional education emphasizes content; distance education emphasizes delivery
Marketing	"Who wants 100 Introduction to Biology courses?"
Time investment, compensation and intellectual property rights	Certainly an issue, but not primary.

Additional comments:

- Lack of educational research frames distance education
- Pedagogical approach would be difficult to transfer to a distance learning environment
- Administration encourages faculty to produce online courses. Appropriate pedagogy not addressed.
- Validity of distance education noted: expanded opportunities for commuters and working non-traditional students

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